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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,004	01/17/2002	Anthony C. Zuppero	22122878-10	9133

26453 7590 09/01/2005

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EXAMINER	
DIAMOND, ALAN D	

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/052,004	ZUPPERO ET AL.	
	Examiner	Art Unit	
	Alan Diamond	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *June 6 and 17, 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,27-37 and 42-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,27-37 and 42-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on June 6 and 17, 2005 have been entered.

Comments

2. The art rejection of claims 1 and 37 and their dependent claims over Lee has been overcome by Applicant's amendment of these claims so as to require the conversion of the energy of the excited carriers into electrical energy. This feature is also present in independent claim 49. Lee does not generate electrical energy, but rather produces luminescence by carrying out a charge transfer chemical reaction. Claims 1, 37, and 49, as well as independent claim 4, also require that highly vibrationally excited molecules are created, and are placed near a conducting surface for electron-jump effect to occur, and require causing at least some of the kinetic energy of the highly vibrationally excited molecules to transfer to the electrons of the conducting surface resulting in excited carriers. In Lee, the catalyst upon which the exothermic chemical reaction occurs does not need to be electrically conducting, but can be an insulator (see col. 2, line 20). Lee excites electron or hole carriers in the insulator or semiconductor by chemical reaction at the surface of the insulator or semiconductor

(see col. 2, line 14 through col. 3, line 5). There is no transfer of kinetic energy resulting in excited carriers.

3. The art rejection over Nienhaus et al is also moot because in Nienhaus et al, as seen in Figure 1, gas particles, such as hydrogen or oxygen, react with the metal surface to create electron-hole pairs. There is no creation of highly vibrationally excited molecules or transfer of kinetic energy to electrons of the conducting surface or electron jump effect. Nienhaus et al creates adsorbates, not highly vibrationally excited molecules, and there is no good reason to assume that the Nienhaus et al's adsorbates are highly vibrationally excited.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-8, 27-37, and 42-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, at line 4, the range "at least some of" with respect to the products of the chemical reaction that desorb and leave, is not supported by the specification, as originally filed. It is suggested that "at least some of" be deleted from said line 4. The same applies to dependent claims 2, 3, 7, 8, 30-36, 42, 44, and 48.

In claim 1, at line 9, the range "at least some of" for the kinetic energy of the highly vibrationally excited molecules transferred to the electrons of the conducting surface is not supported by the specification, as originally filed. Additionally, the "kinetic energy" is not supported by the specification, as originally filed. It is suggested that "at least some of kinetic energy" at line 9 be changed to "vibrational energy". The same applies to dependent claims 5, 6, and 27-29.

In claim 4, at line 6, the range "at least some of" with respect to the products of the chemical reaction that desorb and leave, is not supported by the specification, as originally filed. It is suggested that "at least some of" be deleted from said line 6. The same applies to dependent claims 5, 6, and 27-29.

In claim 4, at line 10, the range "at least some of" for the kinetic energy of the highly vibrationally excited molecules transferred to the electrons of the conducting surface is not supported by the specification, as originally filed. Additionally, the "kinetic energy" is not supported by the specification, as originally filed. It is suggested that "at least some of kinetic energy" at line 10 be changed to "vibrational energy". The same applies to dependent claims 5, 6, and 27-29.

In claim 37, at line 4, the range "at least some of" with respect to the products of the chemical reaction that desorb and leave, is not supported by the specification, as originally filed. It is suggested that "at least some of" be deleted from said line 4. The same applies to dependent claims 43 and 45-47.

In claim 37, at line 9, the range "at least some of" for the kinetic energy of the highly vibrationally excited molecules transferred to the electrons of the conducting

surface is not supported by the specification, as originally filed. Additionally, the "kinetic energy" is not supported by the specification, as originally filed. It is suggested that "at least some of kinetic energy" at line 9 be changed to "vibrational energy". The same applies to dependent claims 43 and 45-47.

In claim 49, at line 4, the range "at least some of" with respect to the products of the chemical reaction that desorb and leave, is not supported by the specification, as originally filed. It is suggested that "at least some of" be deleted from said line 4.

In claim 49, at line 8, the range "at least some of" for the kinetic energy of the highly vibrationally excited molecules transferred to the electrons of the conducting surface is not supported by the specification, as originally filed. Additionally, the "kinetic energy" is not supported by the specification, as originally filed. It is suggested that "at least some of kinetic energy" at line 8 be changed to "vibrational energy".

In claim 49, at lines 11-12, the recitation "with efficiency greater than 2% of catalytic reaction energy" is not supported by the specification, as originally filed.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3, 27, 47, and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, in order to clearly indicate how the chemical potential is related to the electrical energy recited in claim 1, it is suggested that the term "to thereby generate electrical energy" be inserted after "diode junction" at line 2 of claim 3.

In claim 27, at line 2, it is not clear how the "a semiconductor" is related to the semiconductor device in parent claim 4. It is suggested that the term "of the semiconductor device" be inserted after "a semiconductor" at line 2 of claim 27.

Claim 47 is indefinite because the term "reactants" at line 1 should be changed to "one or more reactants" so as to be consistent with parent claim 37.

Claim 48 is indefinite because "the one or more catalyst surfaces" at lines 1-2 lacks positive antecedent support in claim 1. It is suggested that the term "the one or more catalyst surfaces include" at lines 1-2 of claim 48 be changed to "the catalyst includes".

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 6,114,620. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of generating electricity in the

claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

10. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,218,608. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of generating electromagnetic energy in the claim of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

11. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 27-74 of U.S. Patent No. 6,268,560. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of generating electricity in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

12. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,327,859. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of moving an object in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

13. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S.

Patent No. 6,649,823. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of extracting energy in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

14. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,678,305. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of stimulating emission of radiation in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

15. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,700,056. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of generating energy in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

16. Claims 1-8, 27-37, and 42-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 65-97, 102-130, and 144-156 of U.S. Patent No. 6,916,451. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of converting adsorbate reaction energy into power, and the method of stimulating

reactions in the claims of said patent inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

17. Claims 1-8, 27-37, and 42-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-19 and 47 of copending Application No. 09/682,363. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of generating energy in the claims of said copending application inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

18. Claims 1-8, 27-37, and 42-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 20-33 of copending Application No. 10/185,086. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of energizing a quantum well in the claims of said copending application inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claims 1-8, 27-37, and 42-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32, 34, 35, 39, 40, 43, 44, 46, 48, 52-54, 57-63, 65, 67-72, 74-77, 79, 81-89, and

93-102 of copending Application No. 10/625,801. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of producing electrical energy in the claims of said copending application inherently carries out the instant method for generating electrical energy and electromagnetic radiation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

20. Applicant's arguments filed June 6, 2005 have been fully considered but they are not persuasive.

With respect to U.S. Patent 6,678,305, Applicant argues that the claims in the present application are not obvious over the claims in said patent at least because the claims in said patent do not recite the "converting" step recited in instant claim 1. However, this argument is not deemed to be persuasive because since claim 19 of said patent teaches the emission of hot electrons into the diode, then it follows that electrical energy can most certainly be produced.

Conclusion

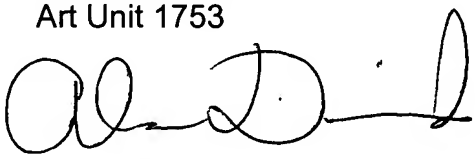
21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,903,433 is hereby made of record.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond
Primary Examiner
Art Unit 1753



Alan Diamond
August 29, 2005